

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (currently amended): A method for a local node and a remote node of an interconnect system to communicate via communication links, the method comprising: ~~A communication link protocol for communicating between a local node and a remote node of an interconnect system via communication links, the communication link protocol comprising:~~

the local node transmitting a first command packet to the remote node over one of the communication links, the first command packet identifying a direct memory access (DMA) write command for performing an inter-node DMA transfer of a block of data directly from the local node to the remote node via one of the communication links;

the local node transmitting a second command packet to the remote node over one of the communication links, the second command packet identifying an administrative write command for writing data from the local node to registers in the remote node via one of the communication links for administrative purposes;

the local node transmitting a third command packet to the remote node over one of the communication links, the third command packet identifying a memory copy write command for copying an entire line of memory from the local node to a corresponding line of memory at the remote node via one of the communication links when a new data is written into the line of memory at the local node even when the new data is smaller than the line of memory at the local node; and

the local node transmitting a fourth command packet to the remote node over one of the communication links, the fourth command packet identifying a built in self test (BIST) command for testing the functionality of one of the communication links.

Claims 2 and 3 (canceled).

Claims 4 to 9 (canceled).

Claim 10 (currently amended): The ~~communication link protocol~~ method of Claim 1, wherein ~~said performing an inter node DMA transfer of a block of data directly from the local node to the remote node~~ the DMA transfer command comprises the local node copying the block of data from a local memory of the local node to a remote memory of the remote node.

Claim 11 (currently amended): The ~~communication link protocol~~ method of Claim 1, wherein ~~said performing an inter node DMA transfer of a block of data directly from the local node to the remote node~~ the DMA transfer command comprises the local node computing parity over multiple blocks of data from a local memory of the local node and writing the parity to a remote memory of the remote node in response to a single DMA write command.

Claim 12 (currently amended): The ~~communication link protocol~~ method of Claim 1, wherein the memory copy write command comprises:

the local node reading existing data from the line of memory in a local memory of the local node;

the local node merging the new data with the existing data so the new data replaces at least some existing data while other existing data remains;

the local node writing merged data to the line of memory in the local memory of the local node;

the local node transferring the merged data via one of the communication links to the remote node; and

the local node writing the merged data to the corresponding line of memory in a remote memory of the remote node.

Claim 13 (currently amended): The ~~communication link protocol~~ method of Claim 12, wherein ~~said~~ the local node writing the merged data to the corresponding line of memory in a remote memory of the remote node comprises the local node writing the remote node using a same address offset of the line of memory at the local memory of the local node.

Claim 14 (new): The method of Claim 1, wherein the DMA transfer command comprises the local node XORing multiple blocks of data from a local memory of the local node and writing the XOR results to a remote memory of the remote node in response to a single DMA write command.

Claim 15 (new): The method of Claim 1, wherein each command packets is of one or more fixed sizes and comprises a packet header and a plurality of data, the packet header being of one transfer unit over the communication links, and the plurality of data being of one or more fixed number of transfer units over the communication links.

Claim 16 (new): The method of Claim 15, further comprising:

the local node receiving a first acknowledgment packet from the remote node over one of the communication links in response to the first command packet;

the local node receiving a second acknowledgment packet from the remote node over one of the communication links in response to the second command packet;

the local node receiving a third acknowledgment packet from the remote node over one of the communication links in response to the third command packet;

the local node receiving a fourth acknowledgment packet from the remote node over one of the communication links in response to the fourth command packet;

wherein each acknowledgement packet is of a fixed size and comprises an other packet header, the other packet header being of one transfer unit over the communication links.

Claim 17 (new): The method of Claim 15, wherein the transfer unit is a quadword comprising 64 bits of data and 8 bits of error correction code bits.

Claim 18 (new): The method of Claim 17, wherein:

the plurality of data is of eight transfer units over the communication links for the DMA write command, the memory copy write command, and the BIST command; and

the plurality of data being one transfer unit over the communication links for the administrative write command.

Claim 19 (new): The method of Claim 15, wherein the packet header and the other packet header each comprises an address field, a packet type field, a command type field, a sequence tag field, and a flag field.

Claim 20 (new): The method of Claim 19, wherein the address field identifies (1) a destination address for the DMA write command or (2) an offset from a base address of the remote node for the memory copy write command.

Claim 21 (new): The method of Claim 19, wherein the packet type field identifies a particular packet as comprising a command or an acknowledgment.

Claim 22 (new): The method of Claim 19, wherein the command type field identifies one of the DMA write command, the administrative write command, the memory copy write command, and the BIST command.

Claim 23 (new): The method of Claim 19, wherein the sequence tag field identifies a sequence number that allows the acknowledgement packet to be associated with the command packet.

Claim 24 (new): The method of Claim 19, wherein the flag field in the packet header of the command packet comprises:

- a first subfield (1) to interrupt to the remote node for the DMA write command or (2) to write to a particular range of the remote memory in the remote node for the memory copy write command;

- a second subfield to reset a counter at the remote node; and

- a third subfield to increment the counter at the remote node for the DMA write command.

Claim 25 (new): The method of Claim 19, wherein the flag field in the other header of the acknowledgement packet comprises:

- a first subfield identifying an error correction code error;

- a second subfield identifying a protocol error;

- a third subfield identifying a BIST error;

- a fourth subfield identifying a software watchdog error; and

- a fifth subfield identifying a particular acknowledgment packet as the acknowledgement packet for the administrative write command.